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EXAMINER
FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/579,715	LICHT ET AL.	
	Examiner	Art Unit	
	Michael J. Feely	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-30* is/are pending in the application.

4a) Of the above claim(s) *17,27 and 30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-26,28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claims 17-30 are pending.

Election/Restrictions

1. Claims 17, 27, and 30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on February 20, 2009. The requirement remains FINAL.

Response to Arguments

2. Applicant's arguments, see pages 6-7 of the response, filed July 28, 2009, with respect to the disqualification of Wissing et al. (US 2006/0003166 A1) as prior art, have been fully considered but they are not persuasive.

The Wissing et al. pre-publication document has a filing date of January 22, 2005 and publication date of January 5, 2006. It claims priority to provisional application 60/584,726, filed on June 30, 2004. The provisional application fully supports Wissing et al. *(note: Applicant can access the provisional application in the PAIR system)*. Accordingly, the 102(e) date for the Wissing et al. pre-publication document is June 30, 2004.

The instant national stage application has an effective filing date of November 16, 2004 *(corresponding to the international filing date)*. This effective filing date falls after the 102(e) date of Wissing et al. Accordingly, Wissing et al. qualifies as prior art under 102(e). The instant

national stage application claims foreign priority to a German application filed on November 18, 2003. This pre-dates the 102(e) date of Wissing et al.; however, Applicant has yet to *perfect* their claim for foreign priority. In order to overcome the intervening reference of Wissing et al., Applicant must file a certified translation of the foreign priority document to demonstrate adequate support of the instant invention. If this is done, the Wissing et al. pre-publication document would *then* be disqualified as prior art.

3. Applicant's arguments, see pages 7-10 of the response, filed July 28, 2009, with respect to the prior art rejection over Wissing et al., have been fully considered but they are not persuasive.

Applicant argues that: 1) Wissing et al. does not disclose the instantly claimed process; and 2) the composition of Wissing et al. is not "storage stable" because it is described as a 2-component composition.

With respect to argument 1), it should be noted that the instant invention is presented in product-by-process language. It has been found that, "[E]ven though product-by-process claims are limited by and defined by the process, **determination of patentability is based on the product itself**. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is **the same as or obvious** from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process," – *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) *(see MPEP 2113)*.

With respect to argument 2), it should be noted that applicant fails to provide a concrete definition of what "storage stable" is. Turning to the specification *(see page 14)*, Applicant discloses:

> The aqueous compositions are suitable both as 1K and 2K systems. 1K systems include the crosslinker and are stable on storage; in 2K systems the crosslinker is not added until shortly before use. In the case of the present invention compositions with non-blocked groups of the crosslinker are also suitable as 1K systems.
> The amines can be blocked with, for example, carboxylic acids and in that case are in the form of acid amides.
> The crosslinker may be added to the actual polyurethane, to the epoxy resin, or only to the mixture of the two.
> In the case of the crosslinker containing free reactive groups the addition is not made until shortly before further processing.
> In the case of a crosslinker with blocked reactive groups the mixture of A), B), and C) is stable on storage.
> ***The addition can therefore be made at an arbitrary point in time and the use of the system as an adhesive can take place at an arbitrary, later point in time.***

This last sentence suggests that storage stability is established, so long as the system remains "stable" between the time the crosslinker is added and the time the system is used as an adhesive. Even a two-component system would feature this type of "stability" to some degree, in order to allow for handling of the adhesive. Otherwise, it would be unworkable and unable to function as an adhesive.

4. Applicant's arguments, see pages 10-14 of the response, filed July 28, 2009, with respect to the prior art rejection over Miyamoto et al. and Kobayashi have been fully considered and are persuasive. The following rejection has been withdrawn:

- The rejection of claims 18-26, 28, and 29 under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al. (US Pat. No. 5,656,701) in view of Kobayashi (US Pat. No. 5,662,966).

Claim Rejections - 35 USC § 102/103

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The rejection of claims 18-26 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wissing et al. (US 2006/0003166 A1) stands.

Regarding claims 18-25, Wissing et al. disclose: ***(18 & 19)*** an aqueous dispersion (Abstract; paragraphs 0008-0023) of:

a polyurethane (A) (paragraphs 0061-0070),

an epoxy resin (B) (paragraphs 0024-0031), and

an amine crosslinker (C) for said epoxy resin (paragraphs 0032-0060) or a *non-blocked* amine crosslinker (C) for said epoxy resin (paragraphs 0032-0060);

(20) wherein the polyurethane is synthesized from:

a) diisocyanates (paragraphs 0062 & 0064),

b) diols of which b_1) from 10 to 100 mol%, based on the total amount of diols (b), have a molecular weight of from 500 to 5000 and b_2) from 0 to 90 mol%, based on the total amount of diols (b), have a molecular weight of from 60 to 500 g/mol (paragraphs 0062 & 0063),

c) non-(a) and non-(b) monomers having at least one isocyanate group or at least one group reactive toward isocyanate groups, and further carrying at least one hydrophilic or potentially hydrophilic group to make the polyurethanes dispersible in water (paragraphs 0062 & 0065),

(21) wherein the epoxy resin is a reaction product of bisphenol A with epichlorohydrin (paragraphs 0024 & 0028); ***(23)*** comprising 1 to 99% by weight of polyurethane (A) and 1 to 99% by weight of epoxy resin (B), based on the sum of (A) and (B) (paragraphs 0018 & 0020; claims 2 & 3);

(22) wherein said amine crosslinker (C) is a compound having at least two reactive amino groups (paragraphs 0032-0033); and

(24) which is an adhesive (paragraphs 0095-0096); and ***(25)*** which is a laminating adhesive (paragraphs 0095-0096: *see subsequent top-coating*). *Furthermore, they disclose a low solvent content (paragraphs 0076-0077).*

Wissing et al. fail to disclose the product-by-process language of the instant invention *(see method steps set forth in non-elected claim 17)*. However, it has been found that, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process," – *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) *(see MPEP 2113)*.

Therefore, it appears that the instantly claimed invention is the same or an obvious variation of the aqueous dispersion set forth in Wissing et al. because Wissing et al. satisfy all of the chemical/material limitations dictated by the instantly claimed product-by-process language. In addition, the aqueous dispersion of Wissing et al. features a low solvent content, corresponding to the solvent removal in step B of the instant invention.

Furthermore, the skilled artisan would have expected the aqueous dispersion of Wissing et al. to be *storage-stable* to some degree because it satisfies all of the material/chemical limitations of the instant invention. It has been found that, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the

properties applicant discloses and/or claims are necessarily present – *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 26, Wissing et al. fail to disclose: ***(26)*** wherein the adhesive is an adhesive *for laminating paper or polymer film to wood*. However, it should be noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Accordingly, claim 26 is met because the adhesive aqueous dispersion of Wissing et al. appears to be inherently capable of laminating paper or polymer film to wood.

8. Claims 18, 19, 21-26, 28, and 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Krishnan et al. (US Pat. No. 5,492,550).

Regarding claims 18, 19, 21-23, 28, and 29, Krishnan et al. disclose: ***(18 & 19)*** an aqueous dispersion (Abstract; column 12, line 46 through column 15, line 16, *particularly column 14, line 15 through column 15, line 16*; Example 19: column 24, lines 15-29) of:

a polyurethane (A) (column 12, line 46 through column 13, line 10; Example 19: column 24, lines 15-29),

an epoxy resin (B) (column 13, lines 17-28; column 7, line 46 through column 8, line 32; Example 19: column 24, lines 15-29), and

an amine crosslinker for said epoxy resin (C) (column 13, line 29 through column 14, line 14; column 8, line 33 through column 10, line 9; Example 19: column 24, lines 15-29) or a *non-*

blocked amine crosslinker (C) for said epoxy resin (column 13, line 29 through column 14, line 14; column 8, line 33 through column 10, line 9; Example 19: column 24, lines 15-29);

(21) wherein the epoxy resin is a reaction product of bisphenol A with epichlorohydrin (column 13, lines 17-28; column 7, line 46 through column 8, line 11); ***(23)*** comprising 1 to 99% by weight of polyurethane (A) and 1 to 99% by weight of epoxy resin (B), based on the sum of (A) and (B) (Example 19: column 24, lines 15-29);

(22) wherein said amine crosslinker (C) is a compound having at least two reactive amino groups (column 13, line 29 through column 14, line 14; column 8, line 33 through column 10, line 9; Example 19: column 24, lines 15-29);

(28 & 29) paper, polymer film, or leather coated with the aqueous dispersion of claim 18 or 19 (column 18, lines 15-45; Example 19: column 24, lines 15-29). *Furthermore, they disclose optional, little or no solvent (column 17, line 65 through column 18, line 14).*

Krishnan et al. fail to disclose the product-by-process language of the instant invention *(see method steps set forth in non-elected claim 17)*. However, it has been found that, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process," – *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) *(see MPEP 2113)*.

Therefore, it appears that the instantly claimed invention is the same or an obvious variation of the aqueous dispersion set forth in Krishnan et al. because Krishnan et al. satisfy all

of the chemical/material limitations dictated by the instantly claimed product-by-process language. In addition, the aqueous dispersion of Krishnan et al. features optional, little or no solvent content, corresponding to the solvent removal in step B of the instant invention.

Furthermore, the skilled artisan would have expected the aqueous dispersion of Krishnan et al. to be *storage-stable* to some degree because it satisfies all of the material/chemical limitations of the instant invention. It has been found that, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present – *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claims 24-26 and 29, Krishnan et al. fail to explicitly refer to their composition as an *adhesive*. However, it appears that it would have inherently featured *adhesive capabilities* because it satisfies all of the material/chemical limitations of the instant invention. It has been found that, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present – *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Further regarding claims 25 and 26, the combined teachings of Krishnan et al. fail to disclose: ***(25)*** wherein the adhesive is a *laminating* adhesive; and ***(26)*** wherein the adhesive is an adhesive *for laminating paper or polymer film to wood*. However, it should be noted that a recitation of the intended use of the claimed invention must result in a structural difference

between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Accordingly, claims 25 and 26 are met because the adhesive aqueous dispersion of Krishnan et al. appears to be inherently capable of laminating paper or polymer film to wood.

Claim Rejections - 35 USC § 103

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krishnan et al. (US Pat. No. 5,492,550) in light of Miyamoto et al. (US Pat. No. 5,656,701).

Regarding claim 20, Krishnan et al. disclose a polyurethane synthesized from: (a) diisocyanates, (b) diols, and (c) non-(a) and non-(b) monomers having at least one isocyanate group or at least one group reactive toward isocyanate groups, and further carrying at least one hydrophilic or potentially hydrophilic group to make the polyurethanes dispersible in water (column 12, line 46 through column 13, line 11). These urethanes have a relatively high weight average molecular weight ranging from about 10,000 to about 50,000. However, they fail to explicitly disclose:

- (b) diols of which (b_1) from 10 to 100 mol%, based on the total amount of diols (b), have a molecular weight of from 500 to 5000 and (b_2) from 0 to 90 mol%, based on the total amount of diols (b), have a molecular weight of from 60 to 500 g/mol.

The skilled artisan would have recognized that a relatively high molecular weight diol reactant has more influence over the final polyurethane molecular weight than a relatively low molecular weight diisocyanate reactant. Accordingly, it would have been obvious to provide high

molecular weight diol reactants when a high molecular weight polyurethane is desired. This notion is supported by Miyamoto et al. who use the instantly claimed diol parameters *(see column 4, lines 33-34)* to yield a polyurethane having a molecular weight on par with the polyurethane set forth in Krishnan et al. *(see Abstract; column 2, lines 52-59; claims)*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the instantly claimed diols when preparing the polyurethane of Krishnan et al. because: (a) the skilled artisan would have recognized that a relatively high molecular weight diol reactant has more influence over the final polyurethane molecular weight than a relatively low molecular weight diisocyanate reactant; and (b) accordingly, it would have been obvious to provide high molecular weight diol reactants when a high molecular weight polyurethane is desired. Furthermore, this notion is supported by Miyamoto et al. who use the instantly claimed diol parameters to yield a polyurethane having a molecular weight on par with the polyurethane set forth in Krishnan et al.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The technical data sheet for EPI-REZ WD-510 corresponds to one of the epoxy materials contemplated by Krishnan et al.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/
Primary Examiner, Art Unit 1796

August 7, 2009